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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,869	01/11/2005	Guofu Zhou	NL 020684	6502
24737 7590 07/26/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER VERDERAME, ANNA L	
			ART UNIT 1756	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/520,869

Applicant(s)

ZHOU, GUOFU

Examiner

Anna L. Verderame

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07/25/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wierenga et al. 6,190,750 in view of Nagata et al. 6,456,584, Zhou 2001/0033991 and Hanaoka et al. 2002/0160306.

Wierenga et al. teaches a dual-layered optical recording medium shown, on the first page of the patent, comprising a first recording stack (2) having a substrate (1), a dielectric layer (2), a recording layer (4), a dielectric layer (5), a reflective layer (6), and a second recording stack (9) having a dielectric layer (10), a recording layer (11), a dielectric layer (12), and a reflective layer (13). An intermediate layer (8) separates the two recording stacks (2) and (9). The transparent spacer layer between the first and second recording stack has a thickness larger than the depth of focus of the laser beam (3/60-67). The dielectric layers 3, 5, 10 and 12 are $(\text{ZnS})_{80}(\text{SiO}_2)_{20}$ (4/55-5/5). Recording layer 4 is of the compound GeSb_2Te_4 and has a thickness of 6 nm (4/56-57). The metal layer of the first recording stack (2) can be made of Cu (claim 9). This medium is suitable for high speed recording (1/60-62).

Wierenga et al. does not teach the specific recording layer composition recited in claims 1 and 5 of the instant application. Further, Wierenga et al. does not teach the use of crystallization promoting layers or the specific materials used for these layers as recited in claims 1-3 of the instant application.

Nagata et al. teaches a dual-layered optical recording medium as shown in figure 2. comprising a first information layer (2), and a second information layer (4). The first information layer (2) comprises a protection layer (21), and interface layer (22), a first recording layer (23), another interface layer (24), and another protection layer (25) layered successively. Further, the second information layer (4) comprises a semitransparent layer (41), a protection layer (42), an interface layer (43), a second recording layer (44), another interface layer (45), another protection layer (46) and a reflection layer (47) layered successively(6/33-57). The two information layers are separated by a spacer layer (3). The protective layers (21),(25),(42), and (46) are made of dielectric materials including those taught at 7/14-16. The interface layers (22),(24),(43), and (45) are provided in order to suppress mutual migration of the constituent elements of adjacent layers(7/25-27). Each interface layer is preferably a nitride or carbide, and for example a material having a general formula X-N or X-O-N where X is Ge,Cr,Si, Al, or Te(7/39-41). The specific composition of the recording layer according to the invention of this application is taught at 8/1-5. The thickness of the recording layer (23) is preferably between 5 and 9 nm (15/2-4). Interface layers have a thickness of 5nm (21/3).

Nagata et al. does not teach the thickness of the interface layers to be less than 5 nm. Also, Nagata et al. does not teach the specific composition of the recording layer as recited in claims 1 and 5 of the instant application.

Zhou et al. teaches a single layered optical recording medium, as shown in figure 3, comprising crystallization accelerating layers (4) and (6) provided on either side of the phase-change recording layer (5). The crystallization accelerating layers, abbreviated as G, can have thicknesses between 0.1 and 10 nm(0015 and 0019). Materials for the crystallization layers are taught at 0018. Use of Ge-Sb-Te type recording layer is taught at 0040.

Hanaoka et al. teaches a dual-layer optical recording medium as shown in figure 3 comprising a substrate overlaid with dielectric layers, crystallization acceleration layers, recording layer, and reflective/heat dissipating layer(0121). Recording layer compositions are taught in table 1, comparative example 2, table 3 examples 7-8, and table 11 examples 8 and 20-22.

In regard to claim 8, Wierenga et al., Nagata et al. and Zhou et al. all teach optical recording medium capable of high speed recording. Zhou et al. teaches that high speed recording refers to a velocity of at least 7.2 m/s according to the Compact Disc Standard(0034).

It would have been obvious to one of ordinary skill in the art to modify the dual-layered optical recording medium taught by Wierenga et al. by forming interface(crystallization accelerating) layers on either side of each phase change recording layer as taught by Nagata et al. and to form these interface layers to have a thickness in the range of 0.1 to 10 nm as taught by Zhou et al. with the

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reasonable expectation of suppressing the mutual migration of the constituent elements of adjacent layers as taught in Nagata et al at (7/25-27). Further, it would have been obvious to use the specific Ge-Sb-Te phase change recording layer compositions taught by Hanaoka et al. with the reasonable expectation of forming a functional dual-layered optical recording medium on the basis that Nagata et al. and Wierenga et al. both teach to the general use of Ge-Sb-Te phase change recording compositions in dual-layered optical recording media.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna L. Verderame whose telephone number is (571)272-6420. The examiner can normally be reached on M-F 8A-4:30P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ALV

A handwritten signature in black ink, appearing to read "Mark F. Huff", is written over a large, stylized "ALV" mark.

MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700